



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

m/l

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/653,825	09/03/2003	Soon Wei Wong	015113-0064 - B76132	4132
33649	7590	11/28/2006	EXAMINER	
Mr. Christopher John Rourk Jackson Walker LLP 901 Main Street, Suite 6000 DALLAS, TX 75202			CHAWAN, SHEELA C	
			ART UNIT	PAPER NUMBER
			2624	

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/653,825	WONG ET AL.	
	Examiner Sheela C. Chawan	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 03 September 2003.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-20 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 03 September 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 4/7/05.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application
 6) Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 4/7/05, the information disclosure statement is being considered by the examiner.

Drawings

2. The Examiner has approved drawings filed on 9/3/03.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 12 and 16, are rejected under 35 U.S.C. 102(b) as being anticipated by F.L.Calhoun (US.3,283,898), Listed in IDS filed on 4/7/05.

As to claim 1, Calhoun discloses an inspection system comprising: a rotating prism (fig 1, 19) having a first end (fig 1, 33a) and a second end (fig 1, 33b), where the first end receives a first image area and rotates (column 1, lines 62-64) about a center point so as to cover a field of view area that is larger than the first image area, and the second end remains centered on the center point and provides the first image to a view area that has constant dimensions (column 3, lines 7-18, column 3, lines 19-41); and an image data system disposed at the second end of the rotating prism, the image data system generating image data as the prism rotates so as to generate two or more sets

of image data from the field of view area (column 3, lines 19- 41, 65-75, column 4, lines 33- 39).

As to claim 2, Calhoun discloses the system of claim 1 further comprising a support holding the rotating prism (fig 1, column 3, lines 7-16).

As to claim 3, Calhoun discloses the system of claim 2 wherein the support further comprises one or more lighting elements (fig 3, column 3, lines 42-44).

As to claim 4, Calhoun discloses the system of claim 2 wherein the support further comprises a plurality of lighting elements disposed around a periphery of the support (column 3, lines 42- 63).

As to claim 5, Calhoun discloses the system of claim 1 further comprising a quadrant inspection system coupled to the image data system, the quadrant inspection system receiving image data from one of four quadrants of the field of view area (fig1, column 3, lines 7-18).

As to claim 6, Calhoun discloses the system of claim 1 further comprising a prism rotation controller coupled to the rotating prism, the prism rotation controller setting the rotation speed of the prism (column 3, lines 19- 41).

As to claim 7, Calhoun discloses the system of claim 1 further comprising an image data acquisition control coupled to the image data system, the image data acquisition control setting an image capture rate (fig 1, 15, column 4, lines 16-29).

As to claim 8, Calhoun discloses the system of claim 1 further comprising a quadrant data analysis system receiving the image data and generating die quadrant image data (fig 1, 33a-33c, column 3, lines 7-18).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 9-11,14,15 and 17- 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over F.L.Calhoun (US.3,283,898), as applied to claims 1-8, 12 and 16 above, and further in view of Onishi (US.7,113,629 B2).

Regarding claim 9, Calhoun discloses an inspection apparatus for inspecting bottles for cleanliness. Calhoun is silent about a die identification system receiving the image data and generating die image data.

Onishi discloses a pattern inspecting apparatus and method for inspecting patterns in numerous chips formed on substrates such as semiconductor wafers. The system comprises of:

comprising a die identification system receiving the image data and generating die image data (column 4, lines 30- 47).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Calhoun to include a die identification system receiving the image data and generating die image data. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Calhoun by the teaching of Onishi in order to determine a large defect occurring in a repetitive pattern area may be detected accurately (as suggested by Onishi at column 2, lines 25- 28).

As to claim 10, Onishi discloses the system of claim 1 further comprising a component identification system receiving the image data and generating component image data (column 4, lines 37- 42).

As to claim 11, Onishi discloses the system of claim 1 further comprising a component inspection system receiving the image data and generating component pass/fail data (column 4, lines 30- 47).

As to claim 12, see the rejection of claim 1 above.

As to claim 13, Calhoun discloses the method of claim 12 further comprising: receiving image data of a third area from the prism; generating third area image data; rotating the prism; receiving image data of a fourth area from the prism; generating fourth area image data; and wherein an item is inspected using the first area image

data, the second area image data, the third area image data, and a fourth area image data (column 3, line 7-16).

As to claim 14, Onish discloses the method of claim 13 wherein the item is a semiconductor die (fig 1 W is a wafer).

As to claim 15, Calhoun discloses the method of claim 13 wherein the first area image data corresponds to a first quadrant (note, each shift position on reference image corresponds to quadrant) of a semiconductor die, the second area image data corresponds to a second quadrant of the semiconductor die, the third area image data corresponds to a third quadrant of the semiconductor die, and a fourth area image data corresponds to a fourth quadrant of the semiconductor die (column 6, lines 50- 59, column 7, lines 39-67, column 8, lines 1-3, 23-63, column 9, lines 14- 53).

As to claim 16, see the rejection of claim 1 above.

As to claim 17, see the rejection of claim 15 above.

As to claim 18, Onish discloses the method of claim 16 further comprising rotating the second area image data to align with the first area image data (note comparing two set of image data based on areas, see fig 4).

As to claim 19, Onish discloses the method of claim 18 further comprising eliminating overlapping sections of the image data (column 7, lines 32- 67, column 8, lines 23- 34).

As to claim 20, Onish discloses the method of claim 16 further comprising analyzing the second area image databased on a predetermined angular relationship to the first area image data (column 8, lines 35-60).

Other prior art cited

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Belleson et al., (US.4,040,748) discloses inspection tool.

Nagasaki et al., (US. 6, 278,797 B1) discloses apparatus for inspecting land-attached circuit board.

Shinada et al., (US.7,022,986 B2) discloses apparatus and method for wafer pattern inspection.

Nakagawa et al., (US. 4, 148,065) discloses method and apparatus for automatically inspection and correcting masks.

Kaneko (US. 6, 721,033 B1) discloses exposure apparatus and exposure method.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is. 571-272-7446. The examiner can normally be reached on Monday - Thursday 7.30 - 6.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sheela Chawan
Patent Examiner
Group Art Unit 2624
Nov 20, 2006

Sheela Chawan
SHEELA CHAWAN
PRIMARY EXAMINER